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ABSTRACT

Retention at the University of Massachusetts, Boston, was studied, based on the entire population of 29,372 undergraduate degree-seeking students enrolled in a semester between fall 1981 and 1987. Two measures of the retention rate are used: cohort survival, the percentage of the original cohort of entering students that is enrolled in or has graduated by a specified semester; and semester return, the percentage of students completing a semester who enroll in the next semester. Attention is directed to: the retention rate, changes in the retention rate over time, and differences in the retention rate among subpopulations of students. Using multivariate regression analysis, the relationship between retention and the following factors were assessed: age, sex, race/ethnicity, college, transfer or first-time student, grade level, full-time or part-time course load, and cumulative grade point average. Also studied were: factors that affect freshman-year retention, retention patterns of stop-outs, within-semester withdrawals, nondegree students who matriculate, and the measurement of retention for the College of Public and Community Service, which uses a competency-based system. (SW)

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UNIVERSITY OF MASSACHUSETTS, BOSTON

Institutional Research and Planning

A LONGITUDINAL STUDY OF STUDENT RETENTION AT AN URBAN COMMUTER UNIVERSITY

SEPTEMBER, 1987

Peter Langer, Jennifer Wilton and Jennifer B. Presley

U.S. DEPARTMENT OF EDUCATION
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TABLE OF CONTENTS

PAGE

I. HIGHLIGHTS OF FINDINGS..... 1

II. INTRODUCTION..... 3

III. OVERVIEW

A. COHORT SURVIVAL OF FIRST-TIME FRESHMEN... 4

B. SEMESTER RETURN RATES..... 6

C. IDENTIFICATION OF INFLUENTIAL FACTORS..... 9

IV. ACADEMIC FACTORS

A. CUMULATIVE GRADE POINT AVERAGE..... 10

B. FULL-TIME VERSUS PART-TIME STATUS..... 13

C. COLLEGE..... 13

D. TRANSFER VERSUS NATIVE STUDENT..... 15

V. SOCIO-DEMOGRAPHIC FACTORS

A. RACE/ETHNICITY..... 19

B. AGE..... 21

C. SEX..... 23

VI. SPECIAL TOPICS

A. FRESHMAN-YEAR..... 24

B. STOP-OUTS VERSUS DROP-OUTS..... 26

C. WITHIN-SEMESTER WITHDRAWALS..... 26

D. NON-DEGREE STUDENTS WHO MATRICULATE..... 27

VII. THE COLLEGE OF PUBLIC AND COMMUNITY SERVICE.... 27

VIII. CONCLUSION..... 28

IX. BIBLIOGRAPHY..... 30

I. HIGHLIGHTS OF FINDINGS

HARBOR CAMPUS

- Twenty percent of students who begin college as freshmen at UMass/Boston graduate within five years, and about 30% eventually graduate.

- When transfer students also are included, an estimated 37% of matriculated students who enter UMass/Boston eventually graduate.

- Sixty percent of incoming freshmen reach sophomore status, and 40% reach junior status.

- Both the overall and the freshman-year retention rates are consistent with national patterns, given the non-traditional nature of UMass/Boston's student population.

- There has been no change in the retention rate since 1981.

- First-time freshmen who begin in the fall semester have a substantially higher retention rate than those freshmen who begin in the spring semester.

- Freshmen retention has increased in the last three years.

- Forty percent of sophomores eventually graduate.

- The strongest influence on retention is the Grade Point Average of the students. At all grade levels students with high GPAs have a much higher retention rate than students with low GPAs.

- Fifty percent of freshmen with GPAs below 2.00 return in the fall, compared to 81% of freshmen with higher GPAs.

- Full-time students have a substantially higher retention rate than part-time students.

- The College of Arts and Sciences has a lower retention rate than the professional programs, but this is mostly explained by student academic and demographic characteristics.

- From 1981 to 1984, freshmen with undeclared majors had a substantially lower retention rate than other freshmen, but that difference has been reduced in the last two years.

- Students who begin their college careers at UMass/Boston have a higher retention rate at each grade level than in-coming transfer students at that grade level. However, transfer retention improves after an initial period of adjustment and approximates native retention by the time of graduation.

- Transfer students from 4-year institutions have slightly higher retention rates than transfer students from 2-year institutions.

- Minority student cohorts have early career retention rates equal to whites, but fall behind whites after the fourth semester, and end up with lower graduation rates.

- Minority and white students with GPAs above 2.00 have the same retention rates, while minority students with GPAs below 2.00 have higher retention rates than comparable white students.

- Students ages 25 and older have lower retention rates than younger students, despite having higher GPAs.

- Women have a higher retention rate than men, primarily related to their higher GPAs.

- About 40% of students who do not return after a semester eventually re-enroll at the University. When these students return they are more likely to leave again than the student population in general.

- Students who withdraw from all courses during a semester are unlikely to ever return.

- Non-degree or "special" students who matriculate have the same subsequent retention rate as students who entered UMass/Boston as degree candidates.

COLLEGE OF PUBLIC AND COMMUNITY SERVICE

- An estimated 40% of students entering CPCS eventually graduate.

- Women students and older students have substantially higher retention rates than men and younger students at CPCS.

- Black student retention has declined since 1983 while white retention has remained stable at CPCS.

II. INTRODUCTION

This is the first report of an ongoing research project on student retention at The University of Massachusetts at Boston. During 1986-1987 the Office of Institutional Research and Planning has developed a long-term retention study plan, created a data set and planned for the annual addition of student information to this data set. Our research agenda plans for the annual updating of the basic information contained in this report, plus the more detailed analysis of special topics and important new developments. The present report provides baseline information on the topics of broadest concern to members of the University.

The central questions addressed in this report are:

1) What is the retention rate of students at UMass/Boston?

2) How has the retention rate changed over time?

3) How does the retention rate differ among different sub-populations of students?

4) How has the retention rate of different sub-populations changed over time?

5) What variables are most strongly associated with student retention?

Our study is based not on a sample, but the entire population of 29,372 undergraduate degree-seeking students enrolled at UMass/Boston in any spring or fall semester between fall 1981 and spring 1987. We begin in fall 1981 because reliable data prior to that time are not available. For the Harbor Campus "enroll" is defined as officially registered for a course at the end of a semester's add/drop period. Because the College of Public and Community Service (CPCS) is competency-based rather than course-based, CPCS is treated in a separate analysis at the end of this report. All findings and statements in this report, therefore, exclude CPCS unless otherwise stated.

A separate document, STUDENT RETENTION AT UMASS/BOSTON, 1981-1987: TABLES AND TECHNICAL APPENDIX, contains supplementary detailed tables, as well as a discussion of the construction of the data set and the measurement of variables. This document is available upon request from OIRP.

We use two measures of the retention rate. The first measure is "cohort survival" which is the percentage of an original identified cohort of entering students that is enrolled in or has graduated by a subsequent specified semester. The second measure is "semester return" which is the percentage of students completing a semester who enroll in the next semester. "Cohort survival" follows a selected population of students over time and includes students who return after an absence, while "semester return" presents snapshots of students of selected characteristics at different times. The latter measure enables us to compare retention rates even when sub-population sizes are small or time span is limited.

III. OVERVIEW

The University of Massachusetts at Boston enrolls a diverse undergraduate student population: 18% are minority, 56% are women, the median age is 22.8 Years. The proportion of students entering with prior college experience is growing, and reached 62% in fall, 1986. Transfer students enter at all grade-years, from the freshman year through to the senior year. For this reason, the cohort analysis of retention patterns of "native" freshmen (those who enter with no prior college experience) is conducted separately from that of transfer students. When the two groups of entering students are combined, however, we estimate that about 37% of all students who enter Harbor Campus programs eventually graduate. At CPCS, the estimated graduation rate is somewhat higher, at 40%.

A. COHORT SURVIVAL OF FIRST-TIME FRESHMEN

Table 1 shows the cohort survival of first-time freshmen entering UMass/Boston since the fall of 1981. In the two fall cohorts we have been able to follow for five years, the graduation rate has been 22.2% and 19.2% with another 10% in each cohort still taking classes. We, therefore, project that 30% of incoming first-time freshmen will eventually receive UMass/Boston degrees.

Table 1

COHORT SURVIVAL OF FIRST-TIME FRESHMEN, FALL 1981 - SPRING 1987

(% ENROLLED AND % GRADUATED IN SUBSEQUENT SEMESTERS)

Entering Semester	1	2	3	4	5	6	7	8	9	10	11	12
Fall '81 (913)	100	85.5	60.7	56.3	46.0	42.3	37.7	25.5	21.3	10.0	9.1	3.4
							Graduated	9.8	12.7	22.2	23.2	27.2
Spring '82 (177)	100	62.2	55.4	40.0	32.8	25.4	24.9	20.3	15.3	9.6	5.6	
							Graduated	4.5	8.5	11.9	15.8	
Fall '82 (960)	100	86.2	65.3	55.8	43.7	40.7	36.2	26.0	21.7	10.8		
							Graduated	7.0	9.6	19.2		
Spring '83 (251)	100	68.9	55.8	46.2	41.8	35.4	30.7	17.5	16.7			
							Graduated	6.0	10.4			
Fall '83 (1168)	100	83.1	62.2	56.3	43.8	37.9	34.5	23.4				
							Graduated	8.1				
Spring '84 (227)	100	74.9	62.1	46.7	41.0	33.9	31.2					
Fall '84 (908)	100	81.3	61.8	54.8	48.0	42.6						
Spring '85 (194)	100	71.1	53.1	45.4	39.2							
Fall '85 (919)	100	82.3	63.5	56.7								
Spring '86 (227)	100	69.6	57.3									
Fall '86 (993)	100	80.7										
Spring '87 (246)	100											

A recent review of student retention studies states that 53% of first-time freshmen who enter four-year public universitites graduate within five years (Terenzini, 1987). There is, however, well-documented evidence that commuting students have lower retention rates than residential students (Chickering, 1974; Astin, 1980; Beal and Noel, 1980). In addition, there is substantial research that shows that many of the factors usually associated with a commuting institution, such as part-time academic status and half-time or more employment, are also related to lower retention rates (Smith, Prather and Hand, 1987; Bean and Plascak, 1987). This research suggests that non-residential universities will have substantially lower retention rates than residential universities, but there is no reliable national information on retention at non-residential universities. We, therefore, cannot say whether the UMass/Boston five year graduation rate of 20% and ultimate graduation rate of 30% is better or worse than that of comparable institutions. Clearly the graduation rate is not good, but given the 100% commuting population and the many part-time students, this low graduation rate is not surprising. The series of reports produced by the UMass/Boston Center for Survey Research (CSR) based on a sample of 1982 freshmen provide important information on students who leave the University. The third-year CSR study (March, 1986) reported that 50% of the students who left UMass/Boston were enrolled at another university. Many of these students may have entered UMass/Boston with goals other than a UMass/Boston degree. We should be careful to avoid equating institutional retention with individual success (Terinzini, 1987).

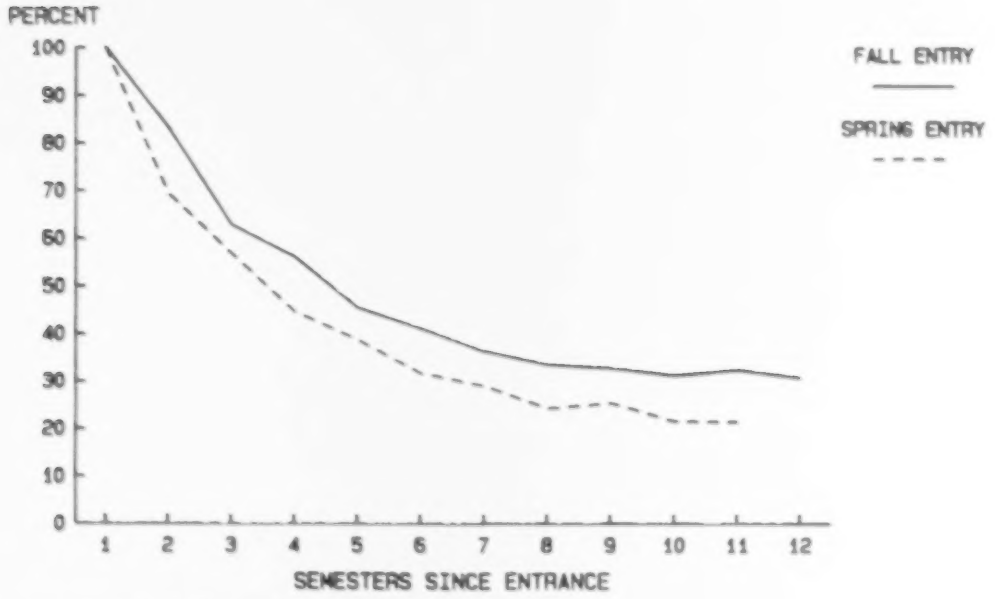
There has been no noticeable improvement in first-time freshmen retention from the cohort entering UMass/Boston in the fall 1981 to the cohort entering in fall 1986. As Table 1 shows, there has been a very consistent cohort retention pattern over the past six years.

There is a clear division between students who start in the fall and students who start in the spring. The difference in fall and spring starters' retention begins with the large attrition over the first summer, which immediately effects spring freshmen starters. Only 69% of first-time freshmen who start in the spring come back in the fall, compared to 83.4% of fall starters enrolling in their second semester. Even after the fall cohorts have been reduced by their first summer attrition, the fall cohorts stay above spring cohorts at all subsequent semester points. It might have been thought that spring cohorts suffer attrition sooner and then approximate fall cohort patterns, but this does not happen. Figure 1 shows that spring cohorts have lower long-term retention rates, with a curve lower than, but paralleling in shape the retention curve of the fall cohorts.

For first-time freshmen cohorts, attrition is sharpest in the first two semesters, and continues to decline in a linear pattern until the sixth semester when the curve flattens out. Only 60% of all entering freshmen are still enrolled in the third semester, with fall cohorts having a cohort average of 62.6% and spring cohorts 56.7%. National findings show that the freshmen year is the time of most loss (Terenzini, 1987), but the figure for all four-year public universities is 70% retention, compared to our finding of 60%. Again, we have a UMass/Boston retention rate lower than national norms, but with no information on comparable non-residential universities. As we shall see later, students who make it to the sixth semester are likely to continue to graduation, but attrition never ceases even as a student nears graduation.

Figure 1

COHORT SURVIVAL OF FIRST-TIME FRESHMEN
PERCENT ENROLLED OR GRADUATED
FALL VS. SPRING ENTRY - 6 YEAR AVERAGE



NOTE: EACH COHORT IS FOLLOWED FROM THE SEMESTER OF ENTRANCE THROUGH THE SPRING OF 1987.

B. SEMESTER RETURN RATES

The fall to spring semester return for all matriculated students since 1981 has been 87.8%, 89.4%, 86.2%, 88.1%, 85.9% and 87.0% for a semester average of 87.4%. This is the percentage of students completing a fall semester without graduating who enroll in the spring semester of that academic year. This percentage has remained stable since 1981 (see Table 2).

The spring to fall semester return since 1981 has been 79.1%, 78.7%, 78.7%, 78.5% and 80.8% for a semester average of 79.2%. The 1986 figure reflects an increase from the level of the previous three years. Retention over the summer is, thus, about 10 percentage points lower than retention during the academic year. It is not surprising that students leave more during the summer than during the academic year, and what is of note is the relative stability of the summer retention over time compared with the fluctuation in mid-year retention.

Table 2

SEMESTER RETURN, FALL 1981 - FALL 1986
TOTAL AND BY GRADE YEAR

Semester	Freshman		Sophomore		Junior		Senior		Total	
	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester
Fall '81	1965	84.1	1903	87.8	1851	89.2	1785	90.6	7504	87.8
Spring '82	1537	68.0	1717	78.1	1812	84.8	1451	84.8	6517	79.1
Fall '82	1938	83.2	1748	90.2	1717	92.4	1858	92.4	7261	89.4
Spring '83	1584	63.4	1592	80.1	1707	86.6	1690	83.8	6573	78.7
Fall '83	1891	80.8	1661	85.1	1802	89.1	2051	89.6	7405	86.2
Spring '84	1496	71.2	1506	77.4	1750	83.3	1598	81.9	6350	78.7
Fall '84	1699	81.0	1738	89.2	1689	91.6	1959	90.4	7085	88.1
Spring '85	1330	70.1	1691	79.1	1713	82.1	1615	81.0	6349	78.5
Fall '85	1540	81.4	1837	85.5	1832	88.5	1917	87.4	7126	85.9
Spring '86	1291	73.9	1653	81.4	1813	84.0	1544	82.1	6301	80.8
Fall '86	1697	82.2	1928	87.0	1986	89.1	1890	88.9	7501	87.0
Semester Average										
Fall		82.1		87.5		90.0		88.4		87.4
Spring		69.3		79.2		84.2		82.7		79.2

When we compare students who are at different grade levels, those in their freshman year (all students with fewer than 30 accumulated credits) have distinctly lower return rates than the three upper grade levels, and the difference between freshmen and upperclass return is much greater over the summer than during the academic year. Spring to fall return of those still in their freshman year has fluctuated quite widely with a semester average of 69.3%, about 10 percentage points lower than the semester averages for the upperclasses. Mid-year freshmen return has averaged 82.1% without much variation, about 6 percentage points lower than upperclass return. As Figures 2 and 3 show, freshmen mid-year return has not improved in the last six years, but there has been an improvement in freshmen spring to fall semester return from 68.0% in 1981 to 73.9% in 1986. Clearly the period with most attrition is the freshmen summer and special care must be taken to influence retention at this point. The improvement that has taken place since 1982 in freshmen return after the summer needs continual monitoring and more detailed analysis in order to be understood and promoted.

In addition to the freshmen-year pattern, the most interesting finding arising from the grade level data is that seniors have lower semester return rates than juniors. Although the differences are not great we would expect to find retention greater as students proceed through their college career, because of the combination of increased investment and proximity to a goal. The slight downturn in senior retention warrants concern, and we turn to this topic later when we investigate graduation rates.

Figure 2

SPRING TO FALL SEMESTER RETURN, 1981 - 1986
TOTAL AND BY GRADE YEAR

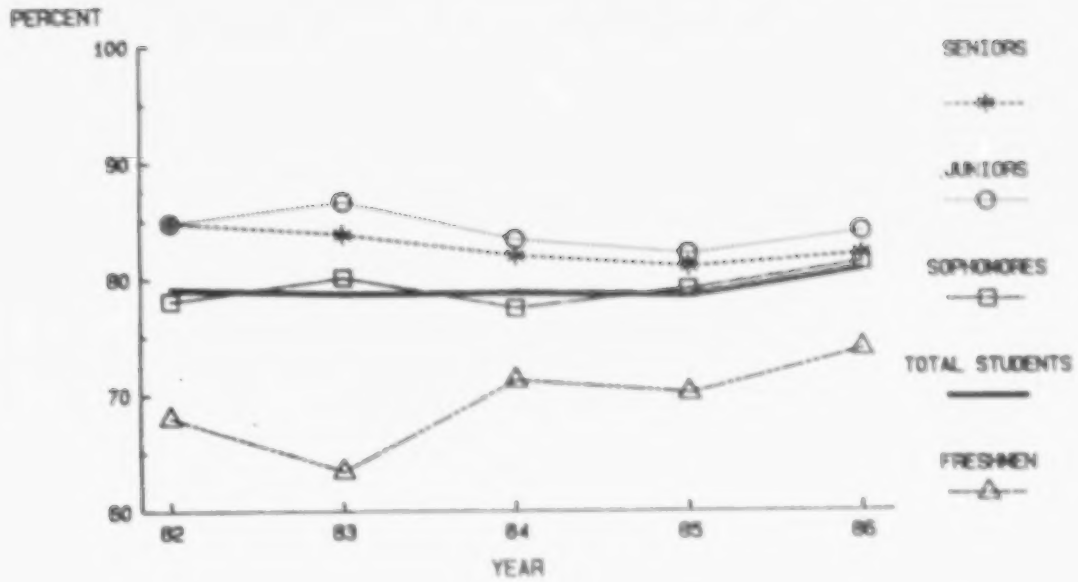
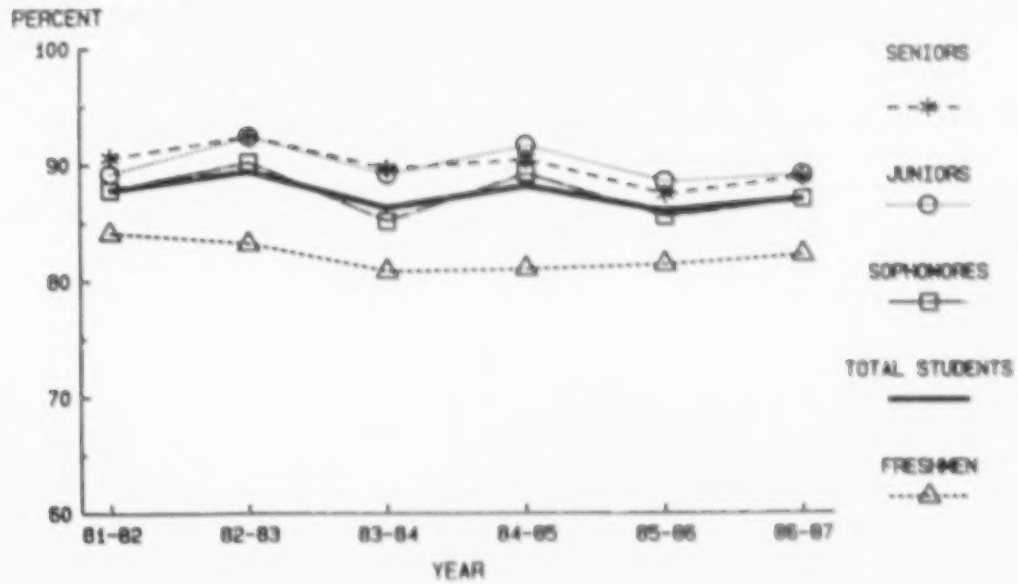


Figure 3

FALL TO SPRING SEMESTER RETURN, 1981 - 1987
TOTAL AND BY GRADE YEAR



C. IDENTIFICATION OF INFLUENTIAL FACTORS

Multivariate statistical techniques enable us to uncover the relationship between a dependent variable, in our case retention, and any number of independent variables theoretically influencing retention. We have used stepwise linear regression in order to show how each of the following variables affects retention once we take the other variables into account: age, sex, race/ethnicity, college, transfer or first-time (native) UMass/Boston student, grade level, full-time or part-time course load, and cumulative grade point average. (We have corroborated our linear regression findings with other multivariate procedures, but present only the linear regression findings because the similarity of results among the different procedures leads us to present the multivariate analysis which is most familiar to readers.)

Several critical points are shown by the regression analysis:

1) GPA at UMass/Boston has by far the strongest relationship to retention of any of our variables. GPA is four times more important than the other variables in our model, accounting for 72% of the explained variance in retention. This is consistent with national studies which have emphasized the critical importance of GPA on student retention, especially among commuter students (Tinto, 1975; Pascarella and Chapman, 1983; Bean, 1985).

2) Full-time course load has a relatively small, but consistently positive, relationship with retention. About 19% of the explained variance in retention is accounted for by a student taking a full-time course load in the semester, independent of other factors. Again, this is in keeping with the findings of other retention studies (Smith, Prather and Hand, 1987; Bean and Plascak, 1987).

3) As much as 22% of freshman-year retention is explained by the variables in our model, whereas upperclass retention is not as well explained by these variables. The relative importance of GPA and full-time status remains the same for freshmen as for all students. Freshman-year retention is more related to the variables which we can measure, whereas upperclass retention may be more influenced by personal or non-academic considerations.

4) Entry mode has a small but consistent relation with retention. Native students have higher retention rates than transfer students, a pattern found in the Center for Survey Research study of a sample of the 1982 freshmen class, and in much national research (Louis and Potter, 1986; Cohen and Brawer, 1982; Graham, 1987).

5) Controlling for other variables, minority status is positively related to fall to spring return, that is, holding other variables constant racial/ethnic minorities have higher fall to spring return rates than whites, and the two groups have no difference in spring to fall return rates. The direct effect of race/ethnicity is insignificant, however, when compared to the direct effect of GPA and full-time status.

6) Among seniors, the greater the number of credits the lower the retention. As seniors approach the number of credits necessary to graduate, many leave without completing the degree. This troubling finding is not explained by GPA or any of the variables in our model.

7) Controlling for the other variables, women have higher retention rates than men, and younger students have higher retention rates than older students.

The above findings from the multivariate analysis will be used to guide our discussion of individual factors. It is important to remember that academic factors - especially GPA and full-time status - have a stronger direct influence on retention than demographic factors such as age, sex, and race/ethnicity. Age, sex and race/ethnicity are associated with retention when looked at in a simple bivariate table, but this association usually is explained by the demographic variable's association with academic factors which in turn influence retention.

IV. ACADEMIC FACTORS

A. CUMULATIVE GRADE POINT AVERAGE

Among the variables we can measure, the strongest correlate with retention at UMass/Boston is the cumulative grade point average of the student. Students with GPAs above 2.00 have a 30 percentage point higher summer rate of return to the University than students with GPAs below 2.00. Table 3 and Figure 4 show that students below 2.00 have an average of only 54.5% return from spring to fall, compared to 83.5% for students between 2.00 and 2.74, 85.0% for students between 2.75 and 3.49, and 86.0% for students above 3.50. These figures make clear that the great divide is at the 2.00 level, and that there is no substantial difference between the retention of students with excellent GPAs and students with average GPAs. The same pattern holds for mid-year return (Figure 5), with low GPA students averaging 70.3% return compared to about 90% for the other students.

Is it possible that although GPA in general has a positive relation to retention, at certain transfer points, such as the sophomore year, students with high GPAs may be in strong market positions and transfer to universities they may not have considered before their experiences at UMass/Boston? This is not, on the average, the case at UMass/Boston. At all class levels the high GPA students are more likely to stay than are the low GPA students. At the sophomore level, students below 2.00 have about a 70% retention rate (although there is great fluctuation here) while higher GPA students have a 90% retention rate. Junior retention is the same and even in the senior year, where it might be imagined that students with marginal GPAs had some exceptional stake in the University in order to persist in the face of low academic achievement, the low GPA students have about the same 70% to 90% relationship to the other students.

Table 3

SEMESTER RETURN, FALL 1981 - FALL 1986
BY CUMULATIVE GRADE POINT AVERAGE

Semester	<1.99		2.00-2.74		2.75-3.49		3.50+	
	Number Comp.	% Returning Next Semester	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester
Fall'81	1420	69.2	2641	91.2	2490	92.5	953	94.2
Spring '82	1217	56.6	2658	82.5	2161	84.5	829	86.1
Fall '82	1387	76.5	3712	91.8	2658	93.5	912	93.2
Spring '83	1301	52.0	3592	84.7	2414	85.5	742	87.1
Fall '83	1324	65.5	4644	90.8	3030	91.8	955	92.1
Spring '84	1097	54.1	4329	83.8	2658	83.9	780	84.0
Fall '84	1185	74.9	2537	88.5	2410	92.2	953	93.5
Spring '85	1114	50.2	2264	83.1	2127	85.5	844	86.0
Fall '85	1102	65.4	2451	87.2	2516	91.2	1057	91.4
Spring '86	996	59.5	2163	83.4	2253	85.4	889	86.7
Fall '86	1140	70.3	2501	88.7	2691	90.8	1169	90.8
Semester Average								
Fall		70.3		89.7		92.0		92.5
Spring		54.5		83.5		85.0		86.0

Figure 4

SPRING TO FALL SEMESTER RETURN, 1981 - 1986
BY CUMULATIVE GRADE POINT AVERAGE

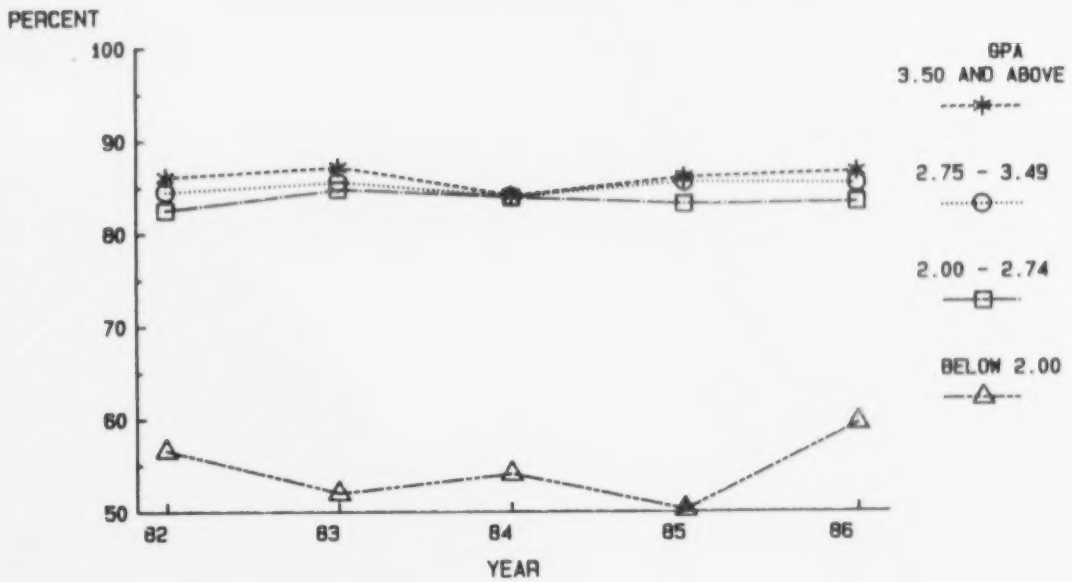
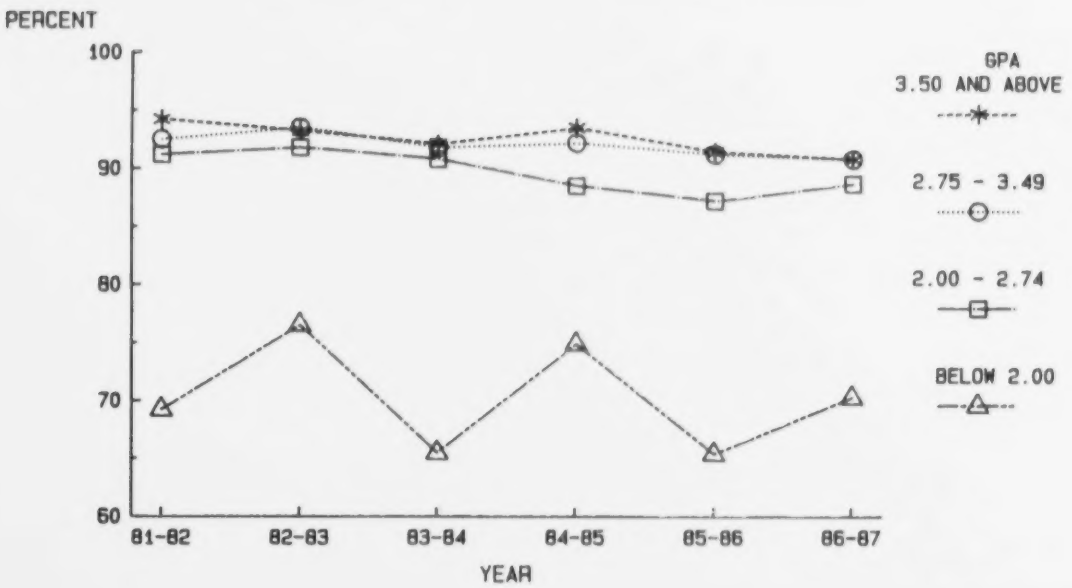


Figure 5

FALL TO SPRING SEMESTER RETURN, 1981 - 1987
BY CUMULATIVE GRADE POINT AVERAGE



B. FULL-TIME VERSUS PART-TIME STATUS

Multivariate analysis has shown that next to Grade Point Average the strongest correlate of retention is the number of credits a student takes in a semester. Students with part-time status in a semester, 11 or fewer credits by our definition, have about a 10 percentage point lower rate of return in the next semester than do students carrying 12 or more credits. Table 4 shows this difference to be equally strong and stable for both spring and fall semesters since 1981. The student who takes a part-time load is probably more vulnerable to financial and personal changes or pressures which prevent the person from continuing to enroll. Since part-time students comprise one-third of UMass/Boston matriculated students special care should be taken to see that these students are given the assistance needed to plan their academic careers.

Table 4

SEMESTER RETURN, FALL 1981 - FALL 1986
BY PART-TIME - FULL-TIME STATUS

Semester	11 or Fewer Credits		12 or More Credits	
	Number Compl.	% Returning Next Semester	Number Compl.	% Returning Next Semester
Fall '81	2377	79.8	5127	91.6
Spring '82	2177	73.0	4340	82.1
Fall '82	3083	84.6	4178	93.0
Spring '83	3076	73.7	3497	83.2
Fall '83	3160	79.3	4245	91.3
Spring '84	3181	76.9	3169	80.5
Fall '84	3087	82.0	3998	92.9
Spring '85	2979	72.4	3370	83.9
Fall '85	3151	79.7	3975	90.8
Spring '86	2943	75.8	3358	85.1
Fall '86	3425	81.1	4076	91.9

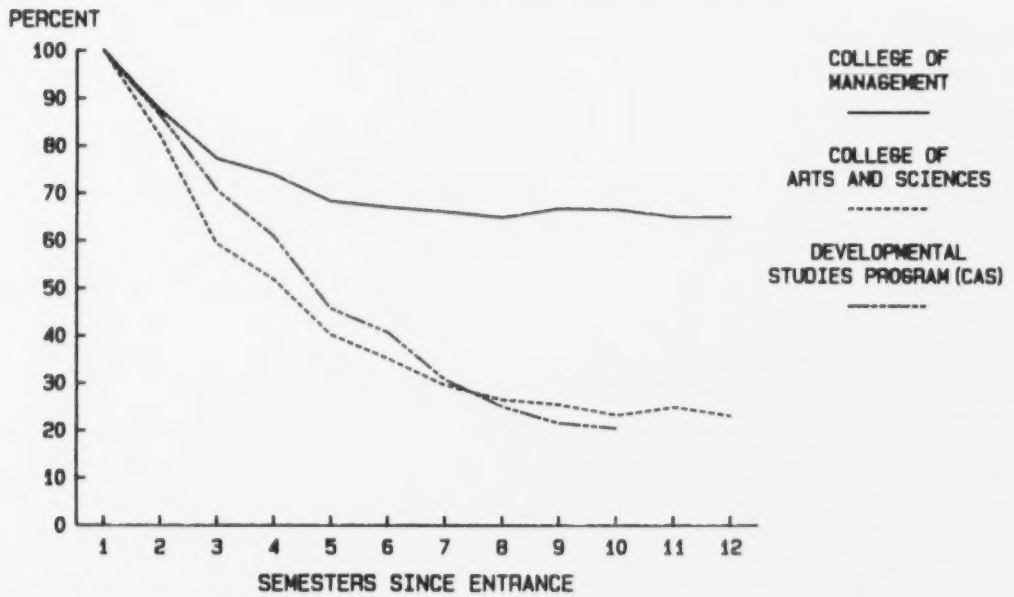
C. COLLEGE

The only academic units with first-time freshmen cohorts large enough to reliably trace cohort survival are spring and fall cohorts of the College of Arts and Sciences, fall cohorts of the College of Management, and fall cohorts in the Developmental Studies Program in CAS.

The retention curve of CAS declines almost linearly to 35% retained in the sixth semester (Figure 6), and then flattens out, but continues to decline. The 6-year graduation rate of the fall 1981 cohort is 20.1% with 2.9% still enrolled and the 5-year graduation rate of the fall 1982 cohort is 14.4% with 7.4% still enrolled. We thus project that the eventual graduation rate of CAS first-time freshmen is 21%. CAS retention has changed little since 1981, with the third semester cohort survival being 56.3%, 62.1%, 58.4%, 58.3% and 61.0% for the fall 1981 to fall 1985 cohorts.

Figure 6

COHORT SURVIVAL OF FALL FIRST-TIME FRESHMEN
PERCENT ENROLLED OR GRADUATED - 6 YEAR AVERAGE
COMPARISON OF CAS, CM AND DSP(CAS)



DSP DATA ARE AVAILABLE SINCE FALL 1982

College of Management retention is markedly higher than in CAS. The CM cohort survival at the third semester averages 75% and the curve flattens at that point, with little attrition after that time. The 6-year graduation rate of the fall 1981 cohort is 59.5% with an additional 5.4% still enrolled and the 5-year graduation rate for the fall 1982 cohort is 46.7% with an additional 19.2% still enrolled. This suggests an eventual graduation rate of 63%. A cautionary note about CM retention is that it has declined over the last three years; 71.8% of the fall 1985 CM cohort enrolled in the third semester, down from the average of previous years, and 82.8% of the 1986 cohort enrolled in the second semester, also down from previous years. Therefore, although the 1981 to 1983 CM cohorts closely approximate the national norm for all 4-year public universities of 50% graduation within five years of matriculation, the 1984 to 1986 cohorts may fall below this norm.

The Developmental Studies Program (DSP) in CAS has a higher retention rate than CAS as a whole up to the students' sixth semester, but as DSP students near graduation, the rate falls behind CAS as a whole. For example, in the fall 1982 cohort 61.8% of the DSP students were retained in semester four compared to 51.0% of CAS as a whole, but only 9.5% of the DSP cohort graduated within ten semesters, compared to 14.4% of CAS as a whole. Figure 6 shows how DSP cohort survival after three semesters is closer to the CM pattern than to CAS as a whole, but whereas CM retention then levels off and CAS as a whole declines less rapidly than it had up until then, DSP retention continues its linear decline up to the eighth semester. It appears that DSP students start strongly, but without ongoing assistance they fall behind other CAS students as they near completion of a degree.

Looking at semester return rates we can compare the retention of other professional programs to the retention of CAS and CM. CAS fall to spring return has ranged from 88.3% in 1982 to 84.2% in 1985, with a six year semester average of 85.7%. The CM return has ranged from a high of 92.5% in 1981 to 89.0% in 1985, with an average of 90.7%. Nursing, Institute for Learning and Teaching (ILT) and Physical Education (PE) show more fluctuation due to smaller enrollments, but they all average fall to spring returns at or above the level of CM. Nursing has a fall to spring average of 91.2%, PE averages 90.6%, and ILT has a particularly strong 93.1% return. Over-the-summer CAS return has been stable at about 75% , about 10 percentage points lower than the CM rate. ILT has shown some variability in spring to fall retention ranging from 82.2% in 1984 to 94.1% in 1982, with a 1986 return of 89.1% for a 93.1% average. Nursing has shown similar variability with a 91.2% average. P E has shown a downward trend in summer retention from 96.3% in 1982 to 82.3% in 1986, with a 87.4% average. In sum, CM and other professional programs have about a 5 percentage point higher return than CAS from the fall to spring semesters, expanded to a 10 percentage point difference in the spring to fall semester return.

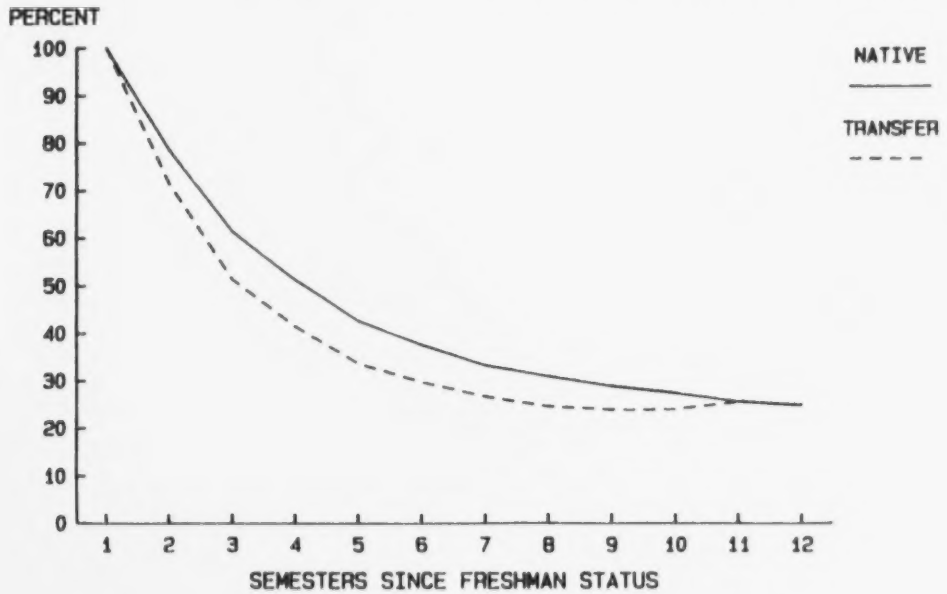
There is little variation by college in the finding of low GPA students having low retention. From fall 1983 to spring 1986, College of Management low-GPA students had somewhat lower return rates than CAS low-GPA students, but in both colleges students with GPAs above 2.00 had about a 20 percentage point higher return rate than students with GPAs below 2.00. The other programs vary greatly due to the relatively small numbers involved, but there is a tendency for low GPA students in ILT and PE to return at a higher rate than low GPA students in CAS and CM.

D. TRANSFER VS. NATIVE STUDENTS

In order to compare transfer careers with first-time freshmen careers, we have first selected for each of the twelve semesters for which we have data the cohorts of transfer students and first-time freshmen who had accumulated fewer than thirty credits. These transfer freshmen and native freshmen are then followed over time and their differing cohort survival patterns compared. For these cohorts of freshmen, native students have higher retention rates than transfer students. However, as Figure 7 shows, the difference between native and transfer survival rates increases for the first few semesters and then begins to decrease. For example, the fourth semester retention rate for natives has averaged 51.2% compared to 41.4% for transfers, but by the tenth semester the graduation rate for the 1981 and 1982 native fall cohorts was 16.9% and 17.1%, compared to 16.5% and 14.8% for the transfer cohorts. Thus, we see that freshman-transfer retention initially is substantially lower than freshman-native retention, but transfer students have almost the same graduation rates as native students.

Figure 7

COHORT SURVIVAL OF TRANSFER AND NATIVE STUDENTS
WITH FRESHMAN STATUS
PERCENT ENROLLED OR GRADUATED - 6 YEAR AVERAGE

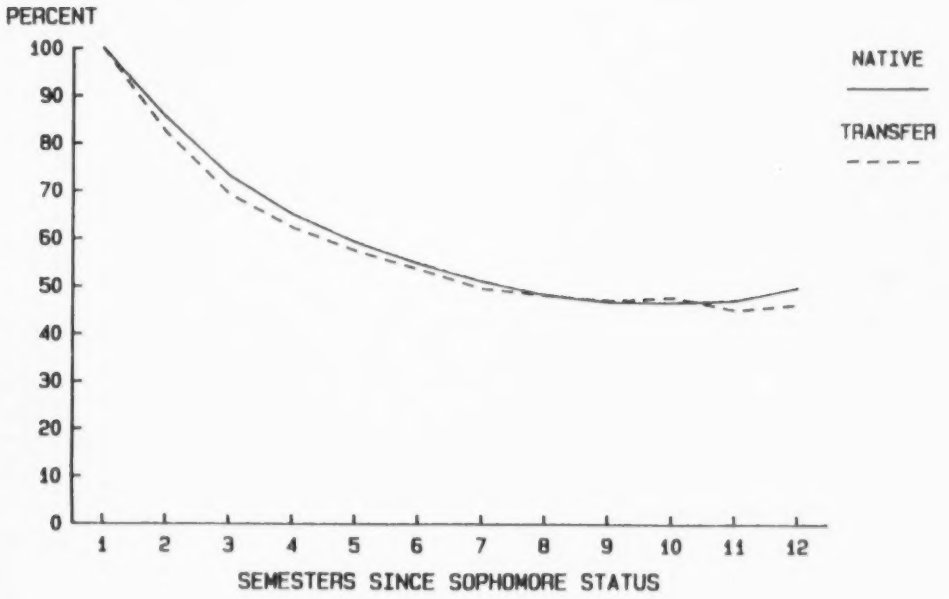


Continuing this comparison of transfer students and native students, we selected all students who had between 30 and 59 credits, dividing them into students who were transfers and students who had started at UMass/Boston. Would the pattern we had found among transfer freshmen and first-time freshmen hold for students who had arrived at sophomore status? Our data as summarized in Figure 8 show that there is little difference in the subsequent enrollment and graduation of sophomore level students of different entry modes. The native students have an initially higher retention rate in the first two or three semesters, but the transfer students catch up and pull even by the time of graduation. Presumably, native sophomores have already been selected out of the vulnerable pool of native freshmen, while the transfer sophomore cohorts still need a "shake down" period. This finding is consistent with the results of a recent study at a public, residential university that suggested that transfer students have lower retention rates than native students in the first two or three semesters after entrance, but that those transfer students remaining for the third semester are just as likely to persist as the native students (Graham, 1987).

Another way of comparing the retention of native and transfer students is to compare the eventual graduation rate of students at different grade levels who have different entry modes. For the 1981 to 1983 fall cohorts, native students had higher graduation rates than transfer students in eleven out of twelve instances. The difference is consistent across grade levels. For example, 39.7% of fall 1981 transfer sophomores had graduated by spring 1987 compared to 43.6% of native sophomores, while 89.4% of fall 1981 senior transfers had graduated by spring 1987 compared to 91.7% of senior natives.

Figure 8

COHORT SURVIVAL OF TRANSFER AND NATIVE STUDENTS
WITH SOPHOMORE STATUS
PERCENT ENROLLED OR GRADUATED - 6 YEAR AVERAGE



This analysis also provided the likelihood of graduating for both transfer and native students once a student has accumulated a certain number of credits, with 20% of freshmen graduating, 40% of the students able to persist into the sophomore level eventually graduating, 65-70% of juniors and 90% of seniors. It is disturbing that 10% of 1981 seniors had not graduated by spring 1987. Along with the vulnerable freshman, the senior who never finishes a degree is an important subject for further research.

The difference between transfer and native student return is detailed in Table 5, where the semester return for each entry mode is compared for all students and for different grade levels. Total return shows little difference between transfer and native students with transfer students having higher overall return in 6 of the 11 semesters. However, this total masks the fact that transfers are at higher grade levels than native students, and students at higher levels have higher return regardless of entry status. In fact, controlling for grade level, transfers have lower return rates than native students. Of the forty-four possible comparisons (11 semesters x 4 grade levels) transfers have lower rates thirty-two times, or 73% of the time. A typical example is fall 1985, when 86.8% of the natives and 85.3% of the transfers returned the next semester. This apparent equality is destroyed when broken down by grade level, where the native

students have substantially higher return: 83.0% vs. 77.0% for freshmen, 88.3% vs. 84.1% for sophomores, 89.8% vs. 88.4% for juniors and 90.1% vs. 87.3% for seniors. Only the relative preponderance of transfer students in the upper grade levels keeps the overall transfer-native return about the same.

In sum, freshman year is a tough one for first-time freshmen at UMass/Boston with many not returning, but those that do persist into the sophomore year have from that time on better retention and higher graduation rates than incoming transfer students. Similarly, the first two semesters for incoming transfers are times of high attrition, but after that the transfer students have only slightly lower retention rates than the native students. Both transfer and native cohorts have some members who do not stay very long and other students who make it through the initial difficult period. These early-semester transfer and native persisters then have similar retention rates.

Table 5

SEMESTER RETURN FOR NATIVE AND TRANSFER STUDENTS
TOTAL STUDENTS AND BY GRADE YEAR

Semester	Freshman		Sophmore		Junior		Senior		Total	
	N	T	N	T	N	T	N	T	N	T
Fall '81	82.4	81.6	87.9	82.0	90.2	86.5	91.3	91.5	86.8	87.0
(No. Completing)	(1122)	(206)	(742)	(466)	(521)	(680)	(515)	(827)	(2900)	(2179)
Spring '82	64.9	56.4	76.8	75.8	87.0	81.3	83.6	86.5	76.1	80.0
(No. Completing)	(798)	(179)	(711)	(389)	(531)	(625)	(365)	(587)	(2405)	(1779)
Fall '82	88.7	74.1	91.4	88.8	94.1	91.1	94.5	92.9	91.3	89.2
(No. Completing)	(1131)	(251)	(677)	(516)	(477)	(637)	(452)	(748)	(2737)	(2151)
Spring '83	71.9	54.7	79.2	80.9	87.6	86.8	80.7	83.1	77.9	80.7
(No. Completing)	(1063)	(236)	(649)	(487)	(461)	(717)	(410)	(657)	(2583)	(2096)
Fall '83	83.6	77.1	89.4	84.8	91.1	88.4	91.2	88.6	87.2	86.3
(No. Completing)	(1449)	(306)	(697)	(653)	(483)	(882)	(488)	(822)	(3117)	(2663)
Spring '84	74.4	64.2	82.0	75.9	81.1	83.9	80.2	82.3	78.4	79.3
(No. Completing)	(1146)	(282)	(704)	(615)	(508)	(886)	(369)	(750)	(2726)	(2533)
Fall '84	84.0	75.7	89.8	89.8	93.2	90.8	90.5	91.6	88.0	89.0
(No. Completing)	(1280)	(362)	(806)	(826)	(503)	(949)	(442)	(996)	(3031)	(3132)
Spring '85	71.1	72.2	80.3	79.7	82.3	83.5	80.7	81.8	77.3	80.9
(No. Completing)	(1019)	(284)	(775)	(821)	(542)	(994)	(363)	(897)	(2697)	(2996)
Fall '85	83.0	77.0	88.3	84.1	89.8	88.4	90.1	87.3	86.8	85.8
(No. Completing)	(1169)	(357)	(823)	(955)	(527)	(1187)	(463)	(1135)	(2981)	(3632)
Spring '86	75.9	68.2	85.9	78.3	83.8	84.6	85.9	80.6	81.9	80.3
(No. Completing)	(953)	(330)	(740)	(876)	(519)	(1205)	(370)	(993)	(2582)	(3402)
Fall '86	83.5	78.7	89.0	86.1	89.2	89.7	91.1	88.8	87.3	87.1
(No. Completing)	(1250)	(442)	(807)	(1096)	(528)	(1401)	(484)	(1228)	(3065)	(4166)

Although UMass/Boston receives transfer students from several hundred institutions, twenty institutions had at least 100 students transfer to UMass/Boston between 1981 and 1987. We divided these 20 institutions into four groups and looked at the semester return of sophomore and junior status students who had transfered from each of the four groups. The four groups and institutions in order of number of transferees are:

1. 4-year private (Northeastern, Boston U., Suffolk, Harvard/Radcliffe, Boston College)
2. 4-year public (UMass/Amherst, SMU, Bridgewater, Salem, Framingham)
3. 2-year private (Quincy Junior, Newbury Junior, Fisher Junior)
4. 2-year public (Bunker Hill, Massasoit, Massachusetts Bay, Roxbury, Middlesex, Cape Cod, North Shore)

Among sophomore status students, transfers from 4-year private schools had the highest average semester return of 80.1%; followed by 4-year public schools, 78.2%; 2-year private, 75.8% and 2-year public, 74.1%. Among the junior status students, the split between the 4-year and the 2-year schools is slightly more pronounced: 4-year private, 86.8%; 4-year public, 86.1%; 2-year private, 82.7% and 2-year public, 82.2%. We, thus, see a consistent ordering of retention rates of students transfering from different types of institutions, but a quite narrow range of difference in these rates.

V. SOCIO-DEMOGRAPHIC FACTORS

A. RACE/ETHNICITY

Cohort survival rates can be calculated for racial/ethnic minority groups only for fall entrants, and even for these cohorts the small size of the Asian and Hispanic cohorts makes it imperative that we treat the findings as suggestive rather than definitive.

White and black first-time freshmen cohort analysis shows blacks beginning with early semester retention rates equal to those of whites, but falling behind whites as time goes on. The fall semester average of black and white cohort survival at the third semester has been 59.8% and 60.8%, respectively, and the fourth semester rates have had blacks higher, 55.6% to 54.3%. However, after this initial parity, black cohort survival rates fall behind white rates. At the sixth semester the average of black cohort survival is 34.5% compared to 40.7% for whites, and at the eighth semester 26.4% of blacks are present compared to 34.6% of whites. The five year graduation rate for the 1981 and 1982 black cohorts is 12.2% compared to 22.7% for whites. The eventual graduation rate of first-time black freshmen is projected to be 20% compared to 30% for whites.

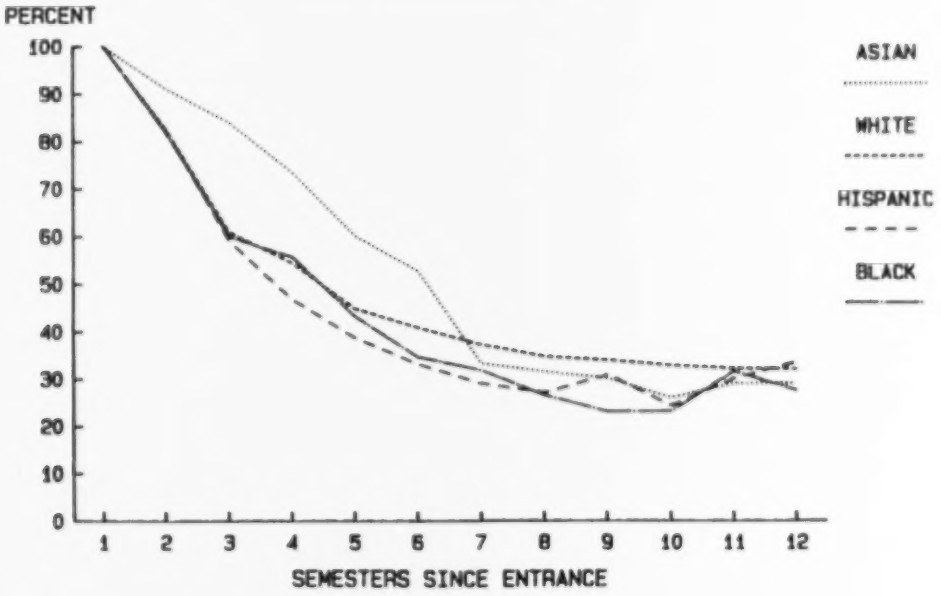
Asians have an even sharper pattern of strong retention in semesters one to four followed by a drop off in later semesters (See Figure 9). For example, the 1983 Asian cohort had 69.4% retention at semester four compared to 56.1% for whites, but only 24.5% were enrolled or graduated by semester eight compared to 33.8% of whites. For the 1981 and 1982 first-time Asian cohorts the 5-year graduation rate was 13.8%. The eventual graduation rate of first-time Asian students is projected to be 23%.

Hispanic cohort survival rates are similar to those of blacks. Of note among the Hispanics is the decline in cohort retention from the 1981 and 1982 level of 50% semester-four retention, to the 1983 and 1984 level of 40% semester-four retention. This lowering of Hispanic retention is continued in the most recent cohort, fall 1986, which has a second semester retention rate of 78.0%, lower than that of any previous Hispanic cohort. Therefore, even though the 1981 and 1982 cohort five-year graduation rate of 12.1% is quite similar to that of the other minority groups, later cohorts may fall below this figure. The eventual graduation rate of Hispanic students is projected to be 21%.

Figure 9 summarizes the six-year average retention for the racial/ethnic groups showing the early semester Asian strength and mid-career decline, and the black and Hispanic falling away from the white pattern after the relative strength of the first three semesters. The patterns for the minority groups after eight semesters are very unstable since they are based on a small number of cohorts of small size. For example, the rise in black and Hispanic rates in semesters 11 and 12 should not be taken as a sign of late semester resurgence, because the rise is based solely on the 1981 cohort which was a particularly strong year for minority retention.

Figure 9

COHORT SURVIVAL OF FALL FIRST-TIME FRESHMEN
PERCENT ENROLLED OR GRADUATED - 6 YEAR AVERAGE
BY RACE/ETHNICITY



Our conclusion is racial/ethnic minorities have relatively strong early career retention rates but gradually fall behind whites and end up with lower graduation rates. This is consistent with the findings of the CSR study, but whereas the CSR study grouped Asians together with whites we see that Asians despite their initially strong early semester retention have eventual graduation rates similar to that of the other racial/ethnic minorities.

We remind the reader here that in our multivariate analysis, once we had controlled for other variables, there was a positive relationship between retention and minority status. In light of the lower overall minority retention rates we must now ask how much of this lower minority retention is related to academic performance. The regression findings are clarified by looking at the three-way cross-tabulation among race/ethnicity, GPA and semester return presented in Table 6. Looking at the column of students with below 2.00 GPA we see starting in fall 1982 a consistent pattern of minority students having higher return rates than white students. What this means is that low GPA minority students return more often than low GPA white students. The last column of this table shows that minority students are more likely to have low GPAs than are white students. The somewhat lower retention of minority students is the result of two opposing forces: low GPA which has a strong influence on all students to leave versus minority status which is associated with higher retention when GPA is held constant. This pattern, however, is compounded by the retention situation of the high GPA minority student. There is no relationship between race/ethnicity and retention among the high GPA students. Minority students who perform well have the same retention rates as similarly performing white students. The only place where minority status matters is among the below 2.00 GPA group. We see, therefore, that the overall relationship between minority status and retention outlined through the regression analysis arises from the behavior of the low GPA minority students.

In sum, the University is retaining its high GPA minority students at the same rate as its white students, while retaining low GPA minority students at a higher rate than white students. The overall lower minority retention rate is related to lower minority academic performance.

B. AGE

The effect of age on retention is quite complex. When looked at in aggregate there is a slight curvilinear relationship between age and semester return, i.e., students age 20 to 24 tend to have higher retention rates than younger or older students. However, this pattern is the outcome of two much stronger forces. First, as we have seen, students with higher GPAs have higher retention, and students under 20 are more likely to have low GPAs than the 20 to 24 or older students. Second, controlling for GPA there is a direct relationship between age and retention with younger students having substantially higher retention rates than older students.

It is the relatively low GPA associated with being a beginning student, and not young age as such, which explains why students under 20 have slightly lower retention rates than students 20-24. Among the under 2.00 GPA students, the average semester return rate of the young, middle, and older students is 66.5%, 62.1% and 57.3%, respectively. Among the 2.00 and above GPA students, the semester return rate averages 90.6%, 89.3% and 85.2%. We see the direct relationship between youth and retention once we control for the powerful influence of GPA. The reason why the youngest student group does not have the highest retention is because of the relatively low GPA of this group, the percentage under 2.00 GPA averages 29.8% compared to 20.1% and 12.8% for the two older categories of students. The lower return of the youngest students is thus connected to the freshmen year adjustment we have mentioned above and return to below.

Table 6

SEMESTER RETURN BY RACE/ETHNICITY BY CUMULATIVE GPA CATEGORY

Semester	Race/ Ethnicity	Below 2.00 GPA	2.00 and Above GPA	% of Race/Ethnic Group Below 2.00 GPA
Fall '81	White	66.0	92.3	18.9
(No. Completed)		(790)	(3394)	
	Minority	66.0	89.9	34.7
(No. Completed)		(200)	(377)	
Spring '82	White	53.7	84.2	18.7
(No. Completed)		(648)	(2813)	
	Minority	54.1	84.1	31.9
(No. Completed)		(159)	(339)	
Fall '82	White	74.6	93.0	16.8
(No. Completed)		(678)	(3307)	
	Minority	87.0	95.1	29.9
(No. Completed)		(200)	(469)	
Spring '83	White	51.2	85.5	17.2
(No. Completed)		(649)	(3117)	
	Minority	59.0	87.8	29.8
(No. Completed)		(205)	(484)	
Fall '83	White	64.7	91.0	16.5
(No. Completed)		(751)	(3814)	
	Minority	74.4	93.7	28.1
(No. Completed)		(254)	(651)	
Spring '84	White	53.1	85.1	15.3
(No. Completed)		(625)	(3460)	
	Minority	57.3	82.6	27.1
(No. Completed)		(225)	(604)	
Fall '84	White	71.8	90.9	15.1
(No. Completed)		(726)	(4089)	
	Minority	82.2	92.2	26.6
(No. Completed)		(247)	(680)	
Spring '85	White	50.1	85.7	15.1
(No. Completed)		(659)	(3714)	
	Minority	52.1	84.9	28.7
(No. Completed)		(257)	(637)	
Fall '85	White	64.2	89.7	13.5
(No. Completed)		(690)	(4440)	
	Minority	68.6	91.7	24.7
(No. Completed)		(248)	(757)	
Spring '86	White	58.2	85.3	13.5
(No. Completed)		(620)	(3976)	
	Minority	67.1	83.6	26.8
(No. Completed)		(246)	(671)	
Fall '86	White	69.7	90.3	13.5
(No. Completed)		(750)	(4789)	
	Minority	72.5	90.4	24.3
(No. Completed)		(280)	(872)	

Students 25 and older have consistently lower retention rates than students aged 20 to 24. The average fall to spring semester return for older students is 86.1% compared to 88.3% for the 20 to 24 year olds, and the spring to fall semester returns are 78.5% and 80.7%, respectively. Although the difference is not great the lower retention of older students is problematic, because these older students have higher GPAs than the 20 to 24 year olds, and even this powerful connection with retention does not bolster their retention rate. It seems, therefore, that whereas GPA is the prime factor in explaining the retention of younger students, the retention of older students may be more connected to external factors, such as job or family commitments.

C. SEX

Since 1981 women have consistently had somewhat higher semester return rates than men, about 5 percentage points higher from spring to fall and 2 percentage points higher during the academic year (Table 7). Once again we see the pattern of summer being the time of greatest attrition for vulnerable groups, in this case, men.

The higher retention of women is related to their higher GPAs. The average percentage of women with GPAs under 2.00 is 14.0%, compared to 21.4% for men. When we control for this GPA difference, women and men have very similar return rates.

Table 7

SEMESTER RETURN, FALL 1981 - FALL 1986
BY SEX

Semester	Female		Male	
	Number Compl.	% Returning Semester	Number Compl.	% Returning Next Semester
Fall '81	3898	89.4	3606	86.1
Spring '82	3385	81.2	3132	76.8
Fall '82	3835	90.1	3426	88.7
Spring '83	3414	80.4	3159	76.9
Fall '83	3955	87.6	3450	84.5
Spring '84	3330	80.6	3020	76.5
Fall '84	3821	88.8	3264	87.4
Spring '85	3373	80.2	2976	76.6
Fall '85	3922	86.9	3204	84.6
Spring '86	3402	82.9	2899	78.3
Fall '86	4244	87.7	3257	86.0

VI. SPECIAL TOPICS

A. FRESHMAN-YEAR

Because of the critical importance of the freshmen year for overall retention rates, we have investigated how some of the variables discussed above for the entire population relate to the semester return rates of students who have not yet accumulated 30 credits.

1) GPA

Freshman-year grade point average influences retention exactly the same as GPA in the population as a whole. There is a large difference in retention between those freshmen below and above 2.00 GPA. Fifty percent of freshmen who have under a 2.00 GPA in a spring semester return the following fall, compared to 81% of freshmen with 2.00 GPA and above. The mid-year difference is also substantial, approximately 70% versus 90% returning. As in the total population, students with excellent GPAs have about the same retention rate as students with average GPAs.

What happens to the students who have less than a 2.00 GPA in the freshmen year but who come back the next semester? If we follow one of our cohorts, fall, 1982, 72.3% (N=718) of the freshmen below 2.00 GPA enrolled in the second semester, but only 23.1% were still enrolled in the fourth semester and less than 10% in the tenth semester. This compares to 89.7% in the second, 62.6% in the fourth and 38.4% in the tenth for the comparison group of fall 1981 freshmen above 2.00 (N=1220). These freshmen year low achievers have massive attrition and the GPAs of those who do persist at the University remain low, rarely averaging above 2.10. This pattern is consistent for all freshmen years from 1981 to 1986. For the 1981 and 1982 cohorts only 10% of the freshmen low performers were still active 10 semesters later, compared to almost 40% of other freshmen.

2) COLLEGE

CAS freshmen retention since 1981 stands in the same relation to CM retention as does their overall student retention: CAS has about 5 percentage points lower mid-year return and 10 percentage points lower summer return. There has been no change in CAS freshmen return since 1981, but there has been a slight decline in CM freshmen return. In 1986, for the first time, freshmen mid-year return was higher in CAS than in CM, a slight 82.5% to 82.2% difference, but a great change from 1981 where the CM return was 91.4% and CAS 81.9% or 1984 where CM freshmen return was 90.5% and CAS 79.5%. CM continues to have a substantially higher summer return, 81.1% in 1986 compared to 72.3% for CAS.

ILT has the highest mid-year semester return of all colleges, although this has declined somewhat in recent years. Semester return of freshmen in Physical Education has declined even more, but the small size of the program makes this fluctuation unremarkable. Freshmen return rates in Nursing are lower than CM rates, a reversal of the relationship between the two colleges in the total population.

In order to further explore the association between academic program and freshmen retention we looked at CAS freshmen who had undeclared majors. Among CAS freshmen, students with undeclared majors have had lower return rates than students with declared majors, but the difference has been reduced in the last two years. The six-year average semester return for undeclared majors is 68.1%, compared to 82.3% for declared majors. In fall 1985 and fall 1986, however, undeclared majors' semester returns have gone up to 79.0% and 81.0%, not much below the declared majors' semester returns of 82.7% and 84.7%. Although declared majors have substantially higher GPAs than undeclared majors, GPA does not explain the difference in the return rates of these two groups. The six-year average semester return for declared majors is 65.4% for those under 2.00 GPA and 89.2% for those with 2.00 and above GPAs. This compares to the undeclared majors 57.2% and 78.0%, respectively. Over the six years, GPA has about twice as strong an association with CAS freshmen return as does declaration of major, but declaration of major still has a sizeable independent influence. This influence has disappeared, however, in the last two fall semesters where there has been no difference between declared and undeclared majors' return once GPA has been controlled. Therefore, declaration or not of major is becoming a less important influence on retention than it had previously been in CAS.

3) RACE

Among freshmen, whites have lower mid-year return rates than Asians, blacks or Hispanics, the six year averages being 81.7%, 89.3%, 83.2% and 85.1%, respectively. At the critical spring to fall semester return whites (70.0%), blacks (68.9%) and Hispanics (69.7%) have very similar average returns, with Asian rates substantially higher at 84.2%. Hispanic and black return rates over the summer have improved markedly since 1982. These data are consistent with the information in the cohort survival analysis presented above, and suggest that whereas freshmen year in general is the point of most attrition and the focus of greatest retention efforts, minority student retention efforts should be focused beyond the freshmen year.

4)AGE

The vulnerability of being a freshmen and the vulnerability of being older, both mentioned above, combine in the older freshmen students to give them a substantially lower return rate than traditionally-aged freshmen. Freshman-year students 19 and younger have fall return rates averaging 85% compared to 78% for those 20 to 24 and 76% for those 25 or older. The gap is greater for spring to fall retention - 81% for the 19 and younger group compared to 71% for both of the older freshmen groups. Clearly, beginning a program at the Harbor Campus is a time of considerable stress and adjustment for the older student and special efforts are necessary to assist older students in this transition. (Note below that the older students at the College of Public and Community Service have higher retention rates than younger students.)

B. STOP-OUTS VS. DROP-OUTS

Students who leave for a semester often return in a subsequent semester. This pattern of taking a break in enrollment is refered to in the literature as "stopping out," rather than dropping-out. It may be presumed that in an institution such as UMass/Boston with many older students working nearly full-time, stopping-out would be a common practice in order to make money to continue in school or in response to work or family demands. On the average, 19% of students who leave for one semester return the next semester, and this pattern has remained stable since 1981. Students keep on returning a number of semesters after they have left, returning as long as our data set is able to track them, although the percent who return after more than four semesters away is quite small. The gradual return of students who have left leads to a return of 36% of the students who left within the 10 semester span of our data. Therefore, we project that about 40% of students who leave in a semester will eventually return, while 60% never return.

When these stop-outs return they are more likely to leave again than the student population in general. There are too few stop-outs returning after three or more semesters away to study their subsequent enrollment, but for those students returning after one, two and three semesters stopping-out, their next semester return rate averages 64.3%, 58.6% and 64.4% compared to 83.6% for all students. The factors that influence stopping-out in the first place continue to influence the careers of these students.

C. WITHIN-SEMESTER WITHDRAWALS

A small number of students never complete any courses during a semester, withdrawing after the second week of the semester from all the courses in which they were enrolled. The overall percentage of within-semester withdrawers is 4% of semester enrollment with freshmen most likely to withdraw - 7% - and seniors least likely - 3%. This pattern of within-semester withdrawal is strongly connected with long term retention at the University. Of all students who withdrew from courses during the fall 1981 semester, only 12.2% had graduated by spring 1987, six years later, compared to 58.2% of students who completed some work in the fall 1981 semester. Among freshmen who completed some course in fall 1981, 22.6% graduated within 6 years, compared to only 1.5% of the freshmen level students who withdrew during that fall 1981 semester. Within-semester withdrawal from all courses is a minor phenomenon, but it serves as a strong indicator that the student is unlikely to ever receive a UMass/Boston degree.

D. NON-DEGREE STUDENTS WHO MATRICULATE

Although we have restricted our central study to the retention of matriculated students, special or non-degree student enrollment is so important in some parts of the University that we have done a separate study of special students who matriculate and their subsequent retention. The data we had available for the special students went back only as far as 1984 and do not permit us to study several of the variables of importance to us, but the data do provide some baseline retention figures and comparisons with other groups.

About 10% of special students in any semester matriculate in the following semester, and fewer than 10% of special students remain taking courses as special students for more than three semesters. Being a special student is something the student does for a short time, usually either matriculating or leaving within two semesters.

Once these students matriculate we are interested in their subsequent retention rates. The semester return of the four cohorts of ex-special students averages 83%, exactly the same figure as our matriculated student semester return discussed above. The retention patterns by sex and minority status are also similar to the patterns in the general student population.

Together the data we have about special students who matriculate suggest that the retention patterns of these students are similar to those of the rest of the student population.

VII. THE COLLEGE OF PUBLIC AND COMMUNITY SERVICE

The competency-based system of the College of Public and Community Service (CPCS) makes the methodology used to measure retention in the other colleges (enrollment in courses) inappropriate for CPCS. It is not necessary to enroll in courses at CPCS in order to pass competencies. In addition, it is quite possible for a student to be actively working with a faculty member towards the achievement of a competency in one semester, fail to complete the competency by the end of that semester, but complete it at the beginning of the next semester. Does this mean that the student had not been "retained" during the first semester? Clearly, no. Therefore, we have developed two different retention standards by which to measure CPCS retention. (See TECHNICAL APPENDIX for details.) One retention standard is to count a student as retained if a competency was completed or a progress report toward a competency was completed within two semesters. This two semester standard gives a student a one semester "grace period" in which no official competency-related work is finished, and our discussions with staff and faculty at CPCS lead us to believe it is reasonable to conclude that students who do not finish some work within this period have indeed taken a break from their studies. In order to provide as much data as possible about CPCS we also have calculated the retention rate at CPCS with a strict one-semester standard of retention, counting as retained only those students having some competency work completed in any semester. The one-semester retention rates have the same pattern over time and across sub-populations as the two-semester rates, but lower by about 5 percentage points.

The two-semester retention standards at CPCS from fall 1981 to fall 1985 have been 88.5%, 70.3%, 82.3%, 77.0%, 78.8%, 77.1%, 79.8%, 77.1% and 76.2%. (The spring 1986 figure is 59.3% but this may underestimate retention in that semester because of the late submissions of competencies in the spring of 1987.) Looking at the fall semesters only, there is a downward trend in CPCS retention from 88.5% in 1981 to 76.2% in 1985.

The difference in retention between men and women at CPCS is strong with women having as much as 15 percentage points higher retention in some semesters. This difference has varied somewhat over the time period, but the overall six year pattern is strong.

The CPCS students divide roughly into three equal age categories: under 30, 30 to 39, and 40 and above. This unusually old student population is much different from the age distribution at the Harbor Campus, and the relationship between age and retention at CPCS is also much different than at the Harbor Campus. At CPCS the older students have the highest retention rate. The relationship is linear and in some semesters very strong. In fall 1983, for instance, the under 30 population had a 71.9% retention rate while the over 40 population had 86.6% retention. In addition to attracting older students, CPCS seems to be doing a very good job retaining these students.

The connection between non-tradtional age and high semester retention does not carry over to one of the other distinctive socio-demographic characteristics of the CPCS student population - its relatively high black student population. Black students had higher retention than white students from fall 1981 to spring 1983, but since that time whites have had higher retention and the gap seems to be widening. Whites had a 81.7% retention compared to blacks' 78.7% in fall 1984, but a much wider 80.6% to 67.6% difference occured in fall 1985. More troubling than the difference between the two groups is that the difference has come about not because of an improvement in white retention but because of a decline in black retention. Table 8 shows this pattern and also indicates that the 1983 reversal of the black and white retention patterns may be connected to an increase in the enrollment of black students after 1983.

VIII. CONCLUSION

The University of Massachusetts at Boston enrolls a broad spectrum of undergraduate students and retains those that meet traditional standards of academic performance. The older student, the part-time student, the educationally disadvantaged student, the minority student, and the transfer student, all have lower retention rates than the "traditional" student. Although UMass/Boston is no different from any other public university in this country in having this problem, we hope that this study provides directions for policies which will allow the University to match its excellent record of access with an equally excellent record of helping students attain their educational goals.

Table 8

COLLEGE OF PUBLIC AND COMMUNITY SERVICE
STUDENT RETENTION BY RACE (BLACK - WHITE)

	One Semester Retention		Two Semester Retention	
Semester	White	Black	White	Black
Fall '81	87.6	87.3	89.7	90.5
(No. Completed)	(185)	(63)	*	*
Spring '82	68.7	65.8	71.9	69.1
(No. Completed)	(278)	(123)	*	*
Fall '82	78.9	62.8	86.4	74.5
(No. Completed)	(251)	(102)	*	*
Spring '83	74.4	75.3	78.0	80.6
(No. Completed)	(250)	(93)	*	*
Fall '83	75.2	67.4	80.2	77.5
(No. Completed)	(359)	(138)	*	*
Spring '84	71.3	61.2	79.4	70.7
(No. Completed)	(282)	(116)	*	*
Fall '84	77.3	72.4	81.7	78.7
(No. Completed)	(339)	(127)	*	*
Spring '85	72.7	64.9	79.3	73.3
(No. Completed)	(363)	(131)	*	*
Fall '85	77.1	61.9	80.6	67.9
(No. Completed)	(401)	(134)	*	*
Spring '86	60.9	55.2	61.1	55.2
(No. Completed)	(419)	(105)	*	*

* The group numbers are the same as in the one semester retention standards.

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